

**Application No.:** 10/817,200  
**Filing Date:** March 31, 2004

## **REMARKS**

This paper is in response to the Office Action dated October 25, 2007. Applicants have amended the application as set forth above. Specifically, Claims 48 and 54 have been amended. Claims 51-53, 64, 66, 67, 69, 70, 72, and 73 have been canceled. New Claims 74-77 have been added. Upon the entry of the amendments, Claims 48-50, 54-59, and 74-77 are pending in this application. No new matter is added by the amendments as discussed below. Applicants respectfully request the entry of the amendments and reconsideration of the application in view of the above amendments and the following remarks.

### **Discussion of Amendments**

The amendments to Claim 48 are made to further specify the configuration of the inlet insert. *Particularly, Claim 48 has been amended substantially the same as the proposed Claim 48 presented to the Examiner during the interview of January 22, 2008 with a few clarifying changes to its wording.* Support for the amendments to Claims 48 can be found in, for example, Figures 6A, 6C, and 6D and description in paragraphs 0071-0073 of the specification.

The amendments to Claim 54 are made to specify the configuration of the flow blocking section and the opening which have been newly added to Claim 48. Support for the amendments to Claims 54 can be found in, for example, Figures 6A, 6C, and 6D and description in paragraphs 0071-0073 of the specification.

Claims 74-77 have been newly added to claim the shapes of the inlet inserts in the embodiments described in Figures 6A, 6C, and 6D and description in paragraphs 0071-0073 of the specification.

As such, Applicants respectfully submit that the amendments are fully supported by the application as originally filed and do not constitute the addition of new matter.

### **No Disclaimers or Disavowals**

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this

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application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

### **Discussion of Rejection Under 35 U.S.C. § 103**

The Examiner rejected Claims 48-59 under 35 U.S.C. § 103 (a) as being unpatentable over Satoh et al. (U.S. patent application publication No. 2002/0011210) in view of Ogawa et al. (U.S. patent application publication No. 2007/0062646). Applicants, however, respectfully submit that Claim 48 as amended is patentable over Satoh et al. and Ogawa et al., as set forth below. Applicants also respectfully submit that Claims 49, 50, 54-59, and 74-77 depending directly or indirectly from Claim 48 are patentable over the references. Claims 51-53 have been canceled, rendering the rejection to these claims moot.

### **Standard for Obviousness Rejection**

The Patent and Trademark Office has the burden under section 103 to establish a *prima facie* case of obviousness. *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-87 (Fed. Cir. 1984). To establish a *prima facie* case of obviousness, the following criteria must be met: there must be a reasonable expectation of success; and the prior art must teach or suggest all the claim limitations. *See* M.P.E.P. § 2143.

Recently, the U.S. Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, 2007 WL 1237837 (U.S. S. Ct. April 30, 2007) stated that it will often “be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the market place; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine *whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.*” p. 12 (emphasis added).

Satoh et al.

Satoh et al. discloses a CVD device equipped with a self-cleaning device. *Satoh et al.*, paragraph 0003. Satoh et al. discloses in Figure 5 a CVD device 110 including a cold-wall reaction chamber 112, a wafer holder 120, an inlet port 140, a cleaning gas exit port 16, and an outlet 142, and a pipe 14. *Id.* at Figure 5; and paragraphs 0123, 0131, 0133, and 0137. As the Examiner admits in the Office Action, however, Satoh et al. does not teach an inlet insert located in the cleaning gas exit port 16.

Ogawa et al.

Ogawa et al. discloses a method and apparatus for removing a natural oxide film formed on a substrate to be processed in the course of manufacturing a semiconductor device. *Ogawa et al.*, paragraph 0001. The apparatus 40 of Figures 5 and 6 of Ogawa is a batch-type apparatus for processing multiple wafers. *Id.* at Figures 5 and 6; and paragraph 0073. The apparatus 40 includes a processing chamber 42 and a boat 47 for processing a plurality of vertically stacked wafers 1. *Id.* at paragraphs 0074 and 0075. The apparatus 40 also includes a gas supply port 52 for supplying gases horizontally into the processing chamber 42. *Id.* at paragraph 0077. The apparatus 40 further includes a distribution plate 57 for distributing a gas in parallel to the wafers 1 across the boat 47. *Id.* at paragraph 0078. The distribution plate 57, 57A has a vertical slit 58 or circular holes 58A forming a gas injection opening(s) 58 or 58A so that the gas can be distributed vertically therethrough and be horizontally into the processing chamber 42. *Id.* at Figures 6 and 7A-7C; and paragraphs 0078, 0099, and 0100.

Claim 48 v. Satoh et al./Ogawa et al.

Applicants respectfully submit that the limitations of the inlet insert recited in Claim 48 is neither taught nor suggested by the combination of Satoh et al. and Ogawa et al. As admitted by the Examiner at page 3 of the Office Action, Satoh et al. does not teach an inlet insert as recited in Claim 48. Ogawa et al. discloses a distribution plate 57, 57A having a single vertical slit 58 or multiple circular holes 58A. *Ogawa et al.*, Figures 6 and 7A-7C; and paragraphs 0078, 0099, and 0100. However, Ogawa et al. does not disclose a distribution plate 57 having *a single opening that*

*is wider in a dimension perpendicular to an elongate axis at at least one portion of the axis than other portions of the axis, as recited in Claim 48 as amended.*

There would not have been an apparent reason to one of ordinary skill in the art to modify the slit 58 or holes 58A of the distribution plate 57, 57A to have the opening shape recited in Claim 48. Ogawa et al.'s distribution plate 57, 57A is used in a context completely different from the inlet insert of Claim 48. Ogawa et al.'s apparatus is a batch-type apparatus for processing multiple wafers. The distribution plate 57 serves to *simultaneously provide a uniform gas flow all across the multiple wafers*. On the other hand, the inlet insert of Claim 48 is located in the second inlet which is open into a laminar flow path defined between another (first) inlet and an outlet. Because the second inlet adds a gas flow to the laminar flow path, there is a need for adjusting the flow in a desired fashion when cleaning the reaction chamber or processing a substrate in the chamber. Such a need would not have been appreciated by one of ordinary skill in the art in view of the art of record. Thus, given Ogawa et al.'s disclosure, it would not have been obvious to one of ordinary skill in the art to modify the distribution plate 57, 57A to have the features recited in Claim 48.

As discussed above, Claim 48 is patentable over the combined teachings of Satoh et al. and Ogawa et al. Claims 49, 50, 54-59, and 74-77 are also patentable over Satoh et al. and Ogawa et al. at least because they depend directly or indirectly from Claim 48, and also recite further distinguishing combinations.

As explained above, Claims 48-50, 54-59, and 74-77 are patentable over the references under 35 U.S.C. § 103(a). For all of these reasons, Applicants respectfully request withdrawal of this rejection.

### **CONCLUSION**

In view of Applicants' amendments to the claims and the foregoing remarks, Applicants respectfully submit that the present application is in condition for allowance. Should the Examiner have any remaining concerns, which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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